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EXAMINER

HOLLIDAY, JAIME MICHELE

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/748,599	Applicant(s) MOLL ET AL.	
	Examiner Jaime M. Holliday	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/19/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on March 19, 2004 has been considered by the Examiner and made of record in the application file.

Specification

2. The disclosure is objected to because of the following informalities:
 - a) On **page 21 line 21**, replace "412" with --418-- after "network" in order to match reference number in figures 5-8;
 - b) On **page 27 line 5**, omit --in the-- after "in the" in order to correct a typographical error;
 - c) On **page 27 line 8**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;
 - d) On **page 28 line 1**, replace both instances of "418" with --412-- after "network" in order to match reference number in figures 5-8;
 - e) On **page 28 line 6**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;
 - f) On **page 28 line 7**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;
 - g) On **page 29 line 3**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;

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h) On **page 30 line 16**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;

i) On **page 31 line 12**, replace "610" with --710-- after "protocol" in order to match the reference number in figure 7;

j) On **page 31 line 17**, replace "610" with --710-- after "protocol" in order to match the reference number in figure 7;

k) On **page 32 line 3**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8;

l) On **page 32 line 5**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8; and

m) On **page 34 line 11**, replace "418" with --412-- after "network" in order to match reference number in figures 5-8.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1, 7-9 and 22-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lamb et al. (U.S. Patent # 6,697,620 B1)** in view of **Sayers et al. (U.S. Patent # 6,539,237)**.

Consider **claim 1**, Lamb et al. clearly show and disclose a method for providing seamless, wireless telecommunication services to customers that move between disparate networks. A Universal Location Service Register (ULSR) communicates and provides mobility management and authentication functions across networks that use different protocols. When a user roams into a network

other than the user's home network and requests registration at an MSC in the serving network, the MSC notifies the ULSR that the user has requested registration. The ULSR determines whether the user can be registered at the serving MSC, and if so, authorizes the registration. The ULSR also manages feature and service interactions for customers. For instance, the ULSR may determine, based on the user's profile, whether a user is subscribed to call waiting or call forwarding service, reading on the claimed "method of providing telecommunication services to a mobile-subscriber terminal roaming in a wireless telecommunication network, comprising: the mobile subscriber terminal roaming into a private-wireless network from a public-wireless network to which it subscribes; retrieving roaming-agreement information from a roaming-agreement database; determining roaming rules, from the roaming agreement information, for operating the mobile subscriber terminal in the private-wireless network; and the private wireless network providing to the mobile-subscriber terminal services in accordance with the roaming rules," (column 2 lines 47-53, 64- column 3 line 3 and lines 16-20).

However, Lamb et al. do not specifically disclose that the user roams from a public-wireless network to a private-wireless network.

In the same field of endeavor, Sayers et al. clearly show and disclose a communication system formed by a private network that includes a private wireless network. The communication system also includes a public wireless network. The communication system permits users to operate freely in both

public and private wireless networks using standard mobile stations. The wireless station can freely roam between the public wireless network and the private wireless network.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a system for roaming from a public wireless network to a private wireless network as taught by Sayers et al. in the method of Lamb et al. in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 7**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 1 above**, and in addition, Lamb et al. further disclose the registration procedure begins when the roaming mobile phone in the territory of network A, reading on the claimed "private-wireless network," realizes it can no longer communicate with network B, reading on the claimed "public-wireless network." When this happens, the roaming terminal requests **205** registration from an MSC **2300** in network A and sends information identifying itself, such as a Mobile Serial Number (MIN) or an Electronic serial Number (ESN), reading on the claimed "first identifier," to the MSC of network A. The MSC notifies **210** the ULSR **1000** that the mobile phone has requested registration in network A and sends the ULSR information identifying the mobile phone. The ULSR then retrieves **215** from its database **1200** the user profile associated with the mobile phone and determines **220** whether the mobile phone

can be registered in network A, reading on the claimed "the mobile-subscriber terminal is identified by a first identifier when operating in the public-wireless network, and wherein the application uses the first identifier when querying the roaming-agreement database for the roaming-agreement information associated with the mobile subscriber terminal," (figures 2a-2c, column 4 line 54- column 5 line 2).

Consider **claim 8**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 1 above**, and in addition, Lamb et al. further disclose the roaming terminal requesting registration from an MSC in network A and sending information identifying itself using an International Mobile Subscriber Identity (IMSI), reading on the claimed "first identifier," to the MSC of network A, reading on the claimed "the mobile-subscriber terminal is identified by a first identifier when operating in the private-wireless network, and wherein the application uses the first identifier when querying the roaming-agreement database for roaming-agreement information associated with the mobile subscriber terminal," (figures 2a-2c, column 4 lines 57-61).

Consider **claim 9**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 8 above**, and in addition, Lamb et al. further disclose the roaming terminal requesting registration from an MSC in network A and sending information identifying itself using a MIN or IMSI, reading on the claimed "first identifier," to the MSC of network A, reading on the claimed "the mobile-subscriber terminal is further identified by a second identifier when

operating in the public-wireless network, and wherein the application uses the first or second identifier when querying the roaming-agreement database for roaming-agreement information associated with the mobile subscriber terminal," (figures 2a-2c, column 4 lines 57-61).

Consider **claim 22**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 1 above**, and in addition, Lamb et al. further disclose when a user roams into a network other than the user's home network and requests registration at an MSC in the serving network, the MSC notifies the ULSR that the user has requested registration. The ULSR determines whether the user can be registered at the serving MSC, and if so, authorizes the registration, reading on the claimed "the roaming-agreement information comprises a registration protocol, and further comprising the mobile-subscriber terminal registering in the private-wireless network according to the registration protocol, wherein the mobile-subscriber terminal registers before being served communications," (column 2 line 64- column 3 line 3).

Consider **claim 23**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 22 above**, and in addition, Lamb et al. further disclose the ULSR has access to a database that stores information about subscribers to the networks **1100** serviced by the ULSR, where the information in the database enables the ULSR to provide mobility management and authentication functions for all the networks that the ULSR supports. Such information may include the location at which the user is currently registered, the

user's home network, a list of networks to which a user is authorized to access, and data for authenticating the user, reading on the claimed "the registration protocol comprises a protocol selected from the group consisting of an authorization protocol, an authentication protocol, an accounting protocol, and a combination of any of the authorization, authentication accounting protocols," (column 4 lines 33-41).

Consider **claim 24**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 22 above**, and in addition, Lamb et al. further disclose the ULSR determines whether the user can be simultaneously registered in both networks A and B. If not, the ULSR sends a message to the **MSC 2400** in network B at which the mobile phone was previously registered, canceling the registration of the mobile phone in network B, reading on the claimed "registration protocol comprises a notification protocol, and further comprising notifying the public-wireless network when the mobile-subscriber terminal registers in the private-wireless network," (column 5 lines 13-18).

Consider **claim 25**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 24 above**, and in addition, Lamb et al. further disclose routing a call to a mobile phone user who has a home network but is registered in another network (serving network). The user's home MSC receives a call for a user that it has determined is not currently registered at the home MSC. The home MSC sends a message to the ULSR for a number to route a call. The ULSR determines the MSC that the user is currently registered

at, then sends a request to the serving MSC for a routing number associated with that MSC. The ULSR then forwards the routing number to the home MSC and the home MSC routes the call to the serving MSC, reading on the claimed "public-wireless network relaying communications for the mobile-subscriber terminal to the private-wireless network," (figures 5a-5c, column 7 lines 5-25).

Consider **claim 26**, Lamb et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 24 above**, and in addition, Lamb et al. further disclose routing a call to a mobile phone user who has a home network but is registered in another network (serving network). The user's home MSC receives a call for a user that it has determined is not currently registered at the home MSC. The home MSC sends a LocationRequest message to the ULSR for a number to route a call. The ULSR determines the MSC that the user is currently registered at, then sends a PROVIDE_ROAMING_NUMBER message to the serving MSC for a routing number associated with that MSC. The ULSR then forwards the routing number to the home MSC and the home MSC routes the call to the serving MSC, reading on the claimed "public-wireless network relaying communications for the mobile-subscriber terminal to the private-wireless network," (figures 5a-5c, column 7 lines 5-25, lines 34-48).

7. **Claims 2, 3 and 27-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lamb et al. (U.S. Patent # 6,697,620 B1)** in view of **Sayers et al.**

(U.S. Patent # 6,539,237), and further in view of Sato et al. (Pub # U.S. 2002/0061766 A1).

Consider **claim 2**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement database is managed by a private-wireless network device that periodically updates the database.

In the same field of endeavor, Sato et al. clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. The base station comprises a section for making a decision as to whether a terminal is to be connected to a carrier network or a private network. The base station also comprises a user registration management section **104** for managing the registration of a mobile station that uses the base station as a private network, and therefore, it is inherent that it is update when user registration changes, reading on the claimed "the roaming-agreement database is managed by a private-wireless network device, and further comprising the private-wireless network device periodically updating roaming-agreement information in the roaming-agreement database," (abstract, figure 8, paragraph 75).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made allow the private network use the base station, reading on the claimed "network device managing the roaming

agreement database,” as taught by Sato et al. in the method of Lamb et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed “mobile-subscriber terminal.”

Consider **claim 3**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement database is managed by a public-wireless network device, and that a private-network device periodically updates the database.

In the same field of endeavor, Sato et al. clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. The base station comprises a section for making a decision as to whether a terminal is to be connected to a carrier network or a private network. The base station also comprises a user registration management section **104** for managing the registration of a mobile station that uses the base station as a private network, and therefore, it is inherent that it is update when user registration changes, reading on the claimed “the roaming-agreement database is managed by a private-wireless network device, and further comprising the private-wireless network device periodically updating roaming-agreement information in the roaming-agreement database,” (abstract, figure 8, paragraph 75).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made allow the private network use the base station, reading on the claimed "network device managing the roaming agreement database," as taught by Sato et al. in the method of Lamb et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 27**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement database includes a call state protocol and a private-network device collects call state information.

In the same field of endeavor, Sato et al. clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. The base station comprises a traffic supervisory section **116** for monitoring the traffic for billing purposes and a user registration management section for managing the registration of a mobile station that uses the base station as a private network. A billing system for the multi-network connection communication system could be a monthly charge system in accordance with the traffic volume, reading on the claimed "roaming-agreement information comprises a call-state protocol, and further comprising the private-wireless-network device collecting call-state information for the mobile-subscriber

terminal according to the call-state protocol while the mobile-subscriber terminal operates in the private-wireless network," (abstract, figure 8, paragraph 57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to collect traffic volume information "reading on the claimed call-state," for billing purposes as taught by Sato et al. in the method of Lamb et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 28**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 27 above**, and in addition, Sato et al. further disclose the traffic supervisory section transmitting the traffic information to the carrier network, so that an existing billing center can issue a billing to the user, reading on the claimed "private-wireless-network device sending to the public-wireless network the call-state information, wherein the public-wireless network is operable to use the call-state information for billing purposes," (paragraph 57).

Consider **claim 29**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 27 above**, and in addition, Sato et al. further disclose a billing system such as a monthly charge system in accordance with the traffic volume, reading on the claimed "call-state information comprises at least call duration information," (paragraph 57).

Consider **claim 30**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement database is managed by a private-wireless network device that periodically updates the database.

In the same field of endeavor, Sato et al. clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. The base station comprises a user registration management section for managing the registration of a mobile station that uses the base station as a private network. It further comprises means for making a decision as to whether a terminal is to be connected to a carrier network or a private network, and means for connecting the terminal to the carrier network or the private network in accordance with the decision result, reading on the claimed "roaming-agreement information comprises a location-based-service protocol, and further comprising the application using the location-based-service protocol to determine a location-based service provider for the mobile-subscriber terminal when the mobile subscriber terminal is operating in the private-wireless network," (figure 8 and paragraph 8).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine a location-based service provider as taught by Sato et al. in the method of Lamb et al., as modified by

Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 31**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 30 above**, and in addition, Sato et al. further disclose the multi-network connection communication system comprises at least a base station, a mobile station and a network. The network is a private network, reading on the claimed "location-based-service protocol specifies that the private-wireless network is the location-based service provider," (paragraph 38).

Consider **claim 32**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 30 above**, and in addition, Sato et al. further disclose the multi-network connection communication system comprises at least a base station, a mobile station and a network. The network is a carrier network provided by a carrier such as a mobile switching network/mobile packet network, reading on the claimed "location-based-service protocol specifies that the public-wireless network is the location-based service provider," (paragraph 38).

8. **Claims 4-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of **Lamb et al. (U.S. Patent # 6,697,620 B1)** and **Sayers et al. (U.S. Patent # 6,539,237)** in view of **Sato et al. (Pub # U.S. 2002/0061766 A1)**, and further in view of **Lee (Pub # U.S. 2001/00468660 A1)**.

Consider **claim 4**, and **as applied to claim 3**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., clearly show and disclose the claimed invention except that the public-wireless network populated a local database in the private-wireless network.

In the same field of endeavor, Lee clearly shows and discloses a BTS (Base station Transceiver Subsystem) that provides both public and private mobile communication services. In the public mobile communication network, the HLR has a subscriber function and a database function for storing the subscriber information, and the VLR has a database function for temporarily storing information about the mobile station existing in the cell managed by the corresponding mobile switching centers (MSC). If the mobile station moves to a cell managed by another MSC, the corresponding information stored in the VLR is deleted, reading on the claimed "the public-wireless network device periodically populates the local database with the roaming-agreement information," (abstract, paragraph 19).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to update roaming-agreement information using a BTS that can provide public mobile communication service as taught by Lee in the method of Lamb et al. in combination with Sayers et al. and modified by Sato et al. in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 5**, and **as applied to claim 3**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., clearly show and disclose the claimed invention except that the public-wireless network populated a local database in the private-wireless network.

In the same field of endeavor, Lee clearly shows and discloses a BTS (Base station Transceiver Subsystem) that provides both public and private mobile communication services. In the public mobile communication network, the HLR has a subscriber function and a database function for storing the subscriber information, and the VLR has a database function for temporarily storing information about the mobile station existing in the cell managed by the corresponding mobile switching centers (MSC). If the mobile station moves to a cell managed by another MSC, the corresponding information stored in the VLR is deleted, reading on the claimed "the public-wireless network device periodically populates the local database with the roaming-agreement information," (abstract, paragraph 19).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to update roaming-agreement information using a BTS that can provide public mobile communication service as taught by Lee in the method of Lamb et al. in combination with Sayers et al. and modified by Sato et al. in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 6**, the combination of Lamb et al, Sayers et al. and Sato et al., as modified by Lee, disclose the claimed invention **as applied to claim 5 above**, and in addition, Lamb et al. further disclose the user roaming from a home network into a serving network and requesting registration at the serving MSC, reading on the claimed "the step of the mobile-subscriber terminal roaming into the private-wireless network comprises the mobile-subscriber terminal registering in the private-wireless network," (column 2 lines 64-66).

9. **Claims 10-11 and 15-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lamb et al. (U.S. Patent # 6,697,620 B1)** in view of **Sayers et al. (U.S. Patent # 6,539,237)**, and further in view of **Sayers et al. (U.S. Patent # 6,687,243)**.

Consider **claim 10**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement information includes a routing protocol.

In the same field of endeavor, Sayers et al. clearly show and disclose a communication system that includes first and second wireless networks that use different protocols for communications in connection with mobile units. The system includes a connection unit **29** for interconnecting the first and second wireless networks. The connection unit can use any convenient switching or routing apparatus for directing calls from one mobile station to another. In one embodiment, the cell router **34** in the connection unit is an IP router that uses IP

addresses for routing calls among the P_BTSSs **27** or for routing calls through the H.323 gateway **42** to the public wireless network, reading on the claimed "roaming-agreement information includes a routing protocol, and further comprising the application using the routing protocol to selected one of a plurality of communication paths to use for serving communications to the mobile-subscriber terminal," (column 5 lines 2-6, column 12 lines 36-42)

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a router as taught by Sayers et al. in the method of Lamb et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 11**, the combination of Lamb et al. and Sayers et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 10 above**, and Sayers et al. further disclose the cell router functions to switch and/or route mobile traffic to and from mobile stations, reading on the claimed "the routing protocol comprises routing logic for serving communications to the mobile-subscriber terminal in the private-wireless network whenever the mobile-subscriber terminal is in the private-coverage area," (column 12 lines 58-59).

Consider **claim 15**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 11 above**, and in addition, Sayers et al. further disclose a range of calls from and to mobile stations in the private network, using standard

Internet Protocols, extends over the Internet in public networks to any Internet facility, reading on the claimed "the private-wireless network interfaces to a transport network, and wherein the routing protocol further comprises routing logic for routing communications through the transport network whenever the mobile-subscriber terminal is in the private-coverage area," (column 10 lines 20-24).

Consider **claim 16**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 15 above**, and in addition, Sayers et al. further disclose a public wireless network using a public wireless protocol such as the Internet, reading on the claimed "the transport network comprises the Internet," (column 7 lines 20-22).

Consider **claim 17**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 15 above**, and in addition, Sayers et al. further disclose that in order to provide external PSTN or public wireless network interconnection, an H.323 gateway is provided, which provides line interface and transcoding functions that allow the voice and data traffic to be sent to existing networks, reading on the claimed "the transport network comprises the Internet, wherein the communications comprise data communications, and wherein the routing logic is operable to route the data communications through the Internet," (column 11 lines 37-42).

Consider **claim 18**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 15 above**, and in addition, Sayers et al. further disclose that in order to provide external PSTN or public wireless network interconnection, an H.323 gateway is provided, which is part of the normal VoIP LAN-PSTN operation, reading on the claimed "the transport network comprises the Internet, wherein the communications comprise voice communications, and wherein routing logic is operable to route the voice communications through the Internet using a voice-over-packet protocol," (column 11 lines 37-42).

Consider **claim 19**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 11 above**, and in addition, Sayers et al. further disclose a P-BTS Virtual Private Network (VPN) **34** formed by the P-BTSs interconnects to GSM PLM **26** through hub **23** and router **33** to the Internet **24**, reading on the claimed "he routing protocol further comprises routing logic for routing communications through the transport network and not the public-wireless network whenever the mobile-subscriber terminal is in the private-coverage area," (figure 15, column 24 lines 27-30).

Consider **claim 20**, the combination of Lamb et al. and Sayers et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 11 above**, and Sayers et al. further disclose that the private cells typically cover a portion of the area covered by on or more of the cells of the wireless network,

reading on the claimed "wherein the public-wireless network serves communications in a first-coverage area, wherein the first-coverage area and private-coverage area are not mutually exclusive; and wherein the routing protocol comprises routing logic for serving communications to the mobile-subscriber terminal is the private-wireless network whenever the mobile-subscriber terminal is in the private-coverage area," (figure 1 and column 7 lines 24-26).

10. **Claims 12-14 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of **Lamb et al. (U.S. Patent # 6,697,620 B1)** and **Sayers et al. (U.S. Patent # 6,539,237)** in view of **Sayers et al. (U.S. Patent # 6,687,243)**, and further in view of **Sato et al. (Pub # U.S. 2002/0061766 A1)**.

Consider **claim 12**, and as applied to **claim 11 above**, the combination of **Lamb et al.** and **Sayers et al.**, as modified by **Sayers et al.**, disclose the claimed invention except that the routing protocol routes communications through the public-wireless network to a user in a private-wireless network.

In the same field of endeavor, **Sato et al.** clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. A "private entity" owns a base station simultaneously connectable to both the private network and carrier network, thus offering public services of the carrier using the private base station, reading on

the claimed "the routing protocol further comprises routing logic for routing communications through the public-wireless network whenever the mobile-subscriber terminal is in the private-coverage area," (abstract and paragraph 71).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to communicate using public services as taught by Sato et al. in the method of Lamb et al. and Sayers et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 13**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 12 above**, and in addition, Lamb et al. further disclose a user roams from a network other than its home network, reading on the claimed "the public-wireless network comprises a home network of the mobile-subscriber terminal," (column 2 lines 64-65).

Consider **claim 14**, the combination of Lamb et al., Sayers et al. and Sayers et al., as modified by Sato et al., disclose the claimed invention **as applied to claim 12 above**, and in addition, Lamb et al. further disclose a method for registering a mobile phone in a network A where the mobile phone was previously registered in a network B, reading on the claimed "the public-wireless network comprises a network in which the mobile-subscriber terminal was last served," (column 2 lines 50-54).

Consider **claim 21**, and **as applied to claim 10 above**, the combination of Lamb et al. and Sayers et al., as modified by Sayers et al., disclose the claimed invention except that the routing protocol routes communications through the public-wireless network to a user in a private-wireless network.

In the same field of endeavor, Sato et al. clearly show and disclose a base station for use in a multi-network connection communication system and its connecting method, wherein the base station is connectable simultaneously to a carrier network and a private network. A "private entity" owns a base station simultaneously connectable to both the private network and carrier network, thus offering public services of the carrier using the private base station, reading on the claimed "the routing protocol further comprises routing logic for routing communications through the public-wireless network whenever the mobile-subscriber terminal is in the private-coverage area," (abstract and paragraph 71).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to communicate using public services as taught by Sato et al. in the method of Lamb et al. and Sayers et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

11. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination **Lamb et al. (U.S. Patent # 6,697,620 B1)** and **Sayers et al. (U.S. Patent**

6,539,237) in view of Sato et al. (Pub # U.S. 2002/0061766 A1), and in further in view of Karaoguz et al. (Pub # U.S. 2004/0203890 A1).

Consider **claim 33**, and **as applied to claim 30 above**, the combination of Lamb et al. and Sayers et al., as modified by Sato et al., clearly show and disclose the claimed invention except that a third-party-location-based service provider is the location-based service provider.

In the same field of endeavor, Karaoguz et al. clearly show and disclose a process of determining locations of and services offered by wireless hotspots. One candidate for offering these services is telephone and wireless telephone providers, where those providers already provide cellular and other wireless telephone data services to their users. Following a similar model as that used for mobile telephones, access to wireless hotspots can be coordinated through wireless telephone service providers, with the wireless telephone service providers assisting in authenticating of users, monitoring of usage, and billing of users. One candidate for offering these services is telephone and wireless telephone providers, where those providers already provide cellular and other wireless telephone data services to their users. Following a similar model as that used for mobile telephones, access to wireless hotspots can be coordinated through wireless telephone service providers, with the wireless telephone service providers assisting in authenticating of users, monitoring of usage, and billing of users, reading on the claimed "location-based-service protocol specifies that a

third-party-location-based-service provider is the location-based-service provider,” (abstract, paragraphs 28 and 29).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have a third party offer services as taught by Karaoguz et al. in the method of Lamb et al. and Sayers et al., as modified by Sato et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed “mobile-subscriber terminal.”

12. **Claims 34 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lamb et al. (U.S. Patent # 6,697,620 B1)** in view of **Sayers et al. (U.S. Patent # 6,539,237)**, and further in view of **Teicher (Pub # U.S. 2004/0242208 A1)**.

Consider **claim 34**, and **as applied to claim 1 above**, Lamb et al., as modified by Sayers et al., clearly show and disclose the claimed invention except that the roaming-agreement information includes a cost protocol.

In the same field of endeavor, Teicher clearly shows and discloses a system and method for payment for mobile communication service over commercial public networks. A mobile customer is attempting to use mobile telephone **103** in an area where mobile network operator **105** has no agreements for providing local service. A service provider **301** operating a base station **303** establishes contact with mobile telephone, and determines mobile network operator has activated that mobile telephone. Service provider realizes that without a pre-existing billing arrangement with mobile network operator, it is

impossible to charge for services furnished. Service provider, like service provider **201**, has no familiarity with mobile customer **101**. But unlike service provider, however, service provider has no agreement for the payment of fees and charges. Consequently, service provider is unable to provide services to mobile customer, and hence a mobile telephony session **305** is denied, reading on the claimed "roaming-agreement information comprises a cost protocol, and further comprising the application using the cost protocol to determine whether to provide service to the roaming mobile-subscriber terminal," (abstract, figure 3, paragraph 16).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to cost to determine if a mobile telephony session may be permitted with a mobile telephone from another mobile network operator as taught by Teicher in the method of Lamb et al., as modified by Sayers et al., in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Consider **claim 34**, the combination of Lamb et al. and Sayers et al., as modified by Sayers et al., disclose the claimed invention **as applied to claim 34 above**, and in addition, Teicher further discloses that financial payment involves a financial institution **405** associated with service provider, and a financial institution **407** associated with mobile customer 101. Financial institution 405 and financial institution **407** are in general different financial institutions, but because they are established in accordance with the financial industry, they are able to

interact and process financial transactions between them via a pre-existing banking channel **415**, reading on the claimed “the cost protocol comprises an agreed-upon cost for a given service,” (figure 4 and paragraph 23).

13. **Claim 36** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of **Lamb et al. (U.S. Patent # 6,697,620 B1)** and **Sayers et al. (U.S. Patent # 6,539,237)** further in view of **Teicher (Pub # U.S. 2004/0242208 A1)**, and further in view of **Armbruster et al. (Pub # U.S. 2003/0100303 A1)**.

Consider claim 36, and as applied to claim 34 above, the combination of Lamb et al. and Sayers et al., as modified by Teicher, clearly show and disclose the claimed invention except that the cost protocol comprises a negotiable rate.

In the same field of endeavor, Armbruster et al. clearly show and disclose a distributed home location register (DHLR) that authorizes a roaming services agreement electronically for a user in a foreign network. Communication between the DHLRs **102-104** and the foreign network **120** also allows the user of the DHLR 102, for example, to customize the billing clearinghouse functions, allowing the user to negotiate the most advantageous billing method (e.g. credit card, prepaid credit, debit account, etc.), reading on the claimed “the cost protocol comprises a negotiable rate for a given service,” (abstract, paragraph 19).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made allow a user to negotiate a rate for

services as taught by Armbruster et al. in the method of Lamb et al. and Sayers et al., as modified by Teicher, in order to provide seamless, wireless telecommunication service to customers, reading on the claimed "mobile-subscriber terminal."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaime M. Holliday whose telephone number is (571) 272-8618. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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